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Public trust in Dutch health care

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Abstract

This article describes the development of a valid and reliable instrument to measure different dimensions of public trust in health care in the Netherlands. This instrument is needed because the concept was not well developed, or operationalized in earlier research. The new instrument will be used in a research project to monitor trust and to predict behaviour of people such as consulting “alternative practitioners”. The idea for the research was suggested by economic research into public trust. In the study, a phased design was used to overcome the operationalization problem. In the first phase, a qualitative study was conducted; and, in the second, a quantitative study. In the first phase, more than 100 people were interviewed to gain insight into the issues they associated with trust. Eight categories of issues that were derived from the interviews were assumed to be possible dimensions of trust. On the basis of these eight categories and the interviews, a questionnaire was developed that was used in the second phase. In this phase, the questionnaire was sent to 1500 members of a consumer panel; the response was 70 percent. The analysis reveals that six of the eight possible dimensions appear in factor analysis. These dimensions are trust in: the patient-focus of health care providers; macro policies level will have no consequences for patients; expertise of health care providers; quality of care; information supply and communication by care providers and the quality of cooperation.

The reliability of most scales is higher than 0.8. The validity of the dimensions is assessed by determining the correlation between the scales on the one hand, and people’s experience and a general mark they would assign on the other. We conclude that public trust is a multi-dimensional concept, including not only issues that relate to the patient-doctor relationship, but also issues that relate to health care institutions. The instrument appears to be reliable and valid. © 2002 Elsevier Science Ltd. All rights reserved.

Keywords: Public trust; Instrument; Monitoring; The Netherlands

Public trust in Dutch health care: towards a measuring instrument

Public trust in health care is a focus of attention. Public trust in American health care has gradually declined during the past twenty years (Blendon, 1988) and this is allegedly related to changes in the institutional structure of health care, especially to incentives for physicians. Public trust in health care could be defined as being confident that you will be adequately treated when you are in need of health care. This means confidence in the agency relation

between patients and health care providers (Mooney & Ryan, 1993).

Public trust should be distinguished from interpersonal trust. The latter implies the transfer of control over certain resources by one actor to another actor, based on the hope or expectation that the other’s actions will satisfy his interests better than would his own action (Coleman, 1990, p. 91). In the case of public trust, there is no explicit action or transfer of control, but only a verbal expression of confidence (Coleman, 1990, p. 96). Public trust and interpersonal trust are related. Public trust can be seen as a generalized attitude based on personal experience in trust situations, on direct communication of other people’s experience and on mass media communication. In its turn, public trust influences

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the way individuals react in interpersonal trust situations.

In health care, patients hand over control of their situation to health care providers. Owing to the nature of health care, being, as it is, based on theoretical expertise and the judgement of experts, people do not know beforehand what kind of care they need and usually cannot judge with hindsight whether the care they did receive was actually necessary and effective. People must have trust in their health care providers. The institutions of health care, in the form of systems of government and professional regulation, aim to guarantee uniformity in the health care product and its quality. These systems prevent health care providers from taking personal advantage of the situation. Public trust in health care can thus be seen as a way of enabling people to deal with the uncertainties and risks associated with handing their fate over to health care providers (For trust as a way of handling uncertainties, see Misztal, 1996; Gilbert, 1998). This would appear to be especially important in health care, where it is difficult for the consumer to judge the quality of services.

It has been hypothesized (Mechanic & Schlesinger, 1996) that changes in the institutions of health care (e.g. as a result of the introduction of incentives based on profit-sharing for professionals) have eroded public trust in health care (Kao, Green, Zaslavsky, Koplan, & Cleary, 1998). Johnson and Johnson (1994) explain why increasing costs can result in decreasing trust. Shortell, Waters, Clarke and Budetti (1998) state that changes in the health care system require new ways of establishing trust.

The importance of studying public trust in health care is twofold. First, at the macro-level, public trust is an indicator of support for the system and for changes in the system. Secondly, at the micro-level, there might be a relation between people's trust in health care, as a general attitude, and their actual behaviour in concrete choice situations. This notion is developed, for instance, in economic research, where one of the main research objectives is to predict people's willingness to buy durable goods. In the literature on trust in health care, there is also a presumed relationship between trust and future behaviour. (Carter, 1989; Gray, 1997). According to Gray (1997), a decline in trust can have the following consequences: patients will more often ask for a second opinion; they will obtain services from "alternative" practitioners and they will want to know "the best physicians" or "the best hospitals". Another possible consequence of a lack of trust could be a lower level of compliance with therapy. In other studies, the relation between trust in the health care system and patient satisfaction has been emphasized (Allen, Stofine, Yang, & Barrett, 1996; Smith, Lyles, Mettler, Marshall, & Stoffelmayr, 1995; Weiss, 1988; Williams & Calnan, 1991).

In the United States, longitudinal research has been carried out monitoring the trust of the American public (Blendon, 1988; Mechanic, 1996). A common feature of these empirical studies is that the concept of trust is hardly ever discussed. Although no consensus on the concept exists, a few elements are frequently mentioned in the definitions. One element, already mentioned, is that trust determines possible future behaviour. Other elements, frequently mentioned, are beliefs and expectations that enable people to deal with uncertainties and risks (Gilbert, 1998). In general, no specific instrument is used to measure trust in empirical research and this is a serious problem. Several studies do have a qualitative design (Johns, 1996; Thorne & Robinson, 1988; Thorn & Campbell, 1997; Zazpe, Margall, Otano, Perochena, & Asiain, 1997). One exception to the trend is a study by Anderson and Dedrick (1990), who have developed an instrument to measure interpersonal trust. In the studies on public trust, the concept is usually operationalized by including one or two items in a questionnaire. The most frequently asked question is whether people have confidence in their health care system. This operationalization may be questioned; because, in theoretical discussions public trust is considered a multidimensional concept (Gray, 1997; Johnson & Johnson, 1994; Mechanic, 1996). Gray (1997) assumes two dimensions: trust in physicians' technical competence and their adherence to a fiduciary ethic—meaning that people trust physicians to put their patients' interests above self-interest. Mechanic (1996) distinguishes five dimensions: trust in physicians' competence, concern with patients' welfare, physicians' control over decision making, management of confidential information and openness in providing and receiving information. Despite the differences between these two authors as regards the number and the content of their dimensions, their common assumption is that public trust is a multidimensional concept. Research in fields other than health care, such as economics and politics, has also concluded that this concept comprises more than one dimension (CBS, 1997; Nobel & Winkels, 1993; Zagorski & McDonnell, 1995). The assumed multidimensionality is reason enough to reconsider the operationalization of the concept of public trust in health care. The question as whether people have trust in the health care system is too general and too superficial. Furthermore, there are no indications of the validity and reliability of the measurements as they were used in empirical research. As a consequence, monitoring public trust and studying the relation between trust and future behaviour, can only be accomplished by using a valid and reliable instrument. Accordingly, the development of such an instrument is the first objective of our research. In this article, the main question is: Is it possible to develop a reliable and valid instrument to measure different dimensions of public trust in health care?

Method

The study had a phased design. It comprised a qualitative and a quantitative phase. The qualitative part focussed on gaining insight into issues that people associate with trust in the health care system. The objective of the quantitative part was to develop a reliable and valid instrument to measure the multi-dimensional concept of public trust. This design was chosen to bridge the gap between the theoretical concept of trust and perceptions about trust in every day life. Qualitative research was conducted to collect these perceptions and to organize the data gathered. The analysis of the data was concerned to distinguish issues related to trust and to divide them into categories. The categories were intended as a framework for the analysis of the data gathered in the second phase. A presumption was that the categories could be considered as dimensions of the concept of trust. The results acquired in this first phase were used as the basis for the questionnaire used in the second, quantitative part of the project.

In the first phase, the main question was: what aspects do the general public regard as part of the concept of public trust in the health care system? In order to answer this question, short telephone interviews were conducted by well-trained interviewers. Example questions were: Do you have trust in the Dutch health care system? Is your trust in the health care system without reservation? Is the degree of your trust influenced by specific experience or media-based information? If you could assign a mark between one and ten to indicate the degree of your trust in the health care system, what mark would you give and why? These questions were meant to act as stimuli to encourage people to express their views. The interviewers were instructed to ask further probing questions.

A simple systematic sample was drawn from the telephone directories of the Netherlands covering more than ninety percent of all Dutch households in order to select the respondents (Kerssens, 1994). This procedure was chosen because of its simplicity in combination with the diversity of people who could be reached. The size of the sample was 296. In 25 cases, the telephone number was incorrect or the subscribers had moved. Of the remaining 271 households contacted, 46 percent were willing to cooperate.

A step-by-step procedure was used to analyse the qualitative data. The objective was to put the qualitative data in some sort of order. The first step was to make an inventory of the topics mentioned in the interview. The second step was to compare these topics. Similar topics were then put in a category and given a preliminary label. Differences between the topics resulted in the creation and labelling of an additional category. Each interview was analysed using this procedure. The procedure resulted in a gradual increase in the specificity and clarity of definition of the categories. Finally a

definitive label was assigned to each category. The classification of the most frequently mentioned topics produced eight possible dimensions of trust. Both the reliability and validity of the analyses were determined in the second phase on the basis of the planned statistical analyses.

Items were formulated on the basis of the eight categories and all the topics. The original phrases in the qualitative interviews were employed to describe the items. Consequently, the formulation of the items closely reflects the way of those interviewed expressed themselves.

Most items in the questionnaire were presented in a four-point Likert-format, with response options ranging from very low trust to very high trust. The items of one possible dimension “confidence in the expertise of health care providers” had a five-point Likert-format. The items are cited in Table 1.

In the questionnaire, the respondents were also able to state that they had ‘no opinion’, i.e. they had no views on the matter. This was the first option respondents could choose in addition to the Likert-type scale. This option was created to ensure that a question was only answered when respondents were actually able to express their degree of trust on that specific topic.

Apart from the trust items a few extra questions were added. Respondents could give a mark that represented their degree of trust in the health care system. By including this item in the questionnaire, it was possible to compare the “old” and the “new” operationalization of the concept. This comparison is used to determine the validity of the new operationalization. The presumption is that there is a statistically significant relation.

To provide further validation of the “public trust” instrument, it will be related to people’s experience of health care. In the literature, past experience is considered to be one of the determinants of trust. The expectation is that there will be a high correlation between trust and personal experience, the experience of friends and relations, and experience on the basis of information from the media (Gambetta, 1988; Mechanic, 1996; Mechanic, 1998a, b).

The questionnaire was sent to 1,500 members of the Netherlands’ Health Care Consumer Panel. This panel, established by NIVEL (the Netherlands institute of services health research) and the Dutch Consumer Association in 1993, has been used to record medical consumption by members every six months as well as their views of current policy issues. Utilization of the health care system was monitored on a regular basis using this procedure, but policy-relevant information was only gathered in a fragmented way. The trust monitor was introduced to provide ongoing background to the recording of views on policy issues.

The response rate was 70 percent in this study. Gender distribution was similar to that of Dutch society as a

whole. Young people were slightly under-represented. Levels of educational attainment did not precisely reflect that of the Dutch population as a whole.

The data was analysed using factor analysis (Principal Components Analysis) in the oblique solution. Factors with only one or two items that could not be grouped together were excluded, because of the potentially low reliability of such factors. Items were also excluded when the commonality was less than 0.20 or when an item had a high factor score (>0.30) on more than one dimension. The dimensions of the factor analyses were compared with the categories or possible dimensions that resulted from the first phase of this study.

Cronbach's alpha was calculated to determine the reliability of the scales obtained. Finally, analyses were conducted to gain insight into the validity of the instrument. The analyses concerned the correlation between the scale scores on the one hand, and the mark people gave to express their confidence in Dutch health care and their experience with it, on the other hand. For each scale, a sum-score of the items belonging to a dimension was computed. The issue of partial non-response was tackled by determining the sum-score by dividing the sum of the items by the number of items a respondent did answer. One result is that non-response per scale is minimized.

Results

Qualitative phase

The result of the first phase is a long list of topics that people associate with confidence in the health care system, categorized in eight possible dimensions. Each of these dimensions represents a cluster of topics frequently mentioned in the telephone interviews.

The first dimension is “trust in the patient-focus of health care providers”. This dimension relates to the patient's confidence that he or she is the focus of the providers' attention and is taken seriously by them.

The second dimension is “trust that policies at the macro-level will be without consequences for the patient”. This dimension relates to policy issues like waiting lists and cost-cutting measures as they affect patients.

The third dimension is “trust in the expertise of health care providers” which relates to the competence and skills of the care providers in general.

The fourth dimension is “trust in the quality of care”. Topics mentioned were the prescription of the correct dosage for medicines, the quality of diagnosis and treatment.

The fifth dimension is “trust in information supply and communication by care providers”. The topics generally refer to confidence in the information that

physicians provide in respect of possible treatment and its consequences, for example.

The sixth dimension is “trust in the quality of cooperation”. This includes topics such as a high level of cooperation among providers, and the absence of contradictory information from doctors.

The seventh dimension is “trust in the time spent on patients”.

The eighth and last dimension is “trust in the availability of care” and concerns topics, such as keeping appointments, timely referral and discharge from hospital when the time is ripe.

Quantitative phase and comparison dimensions of trust

Table 1 shows the six dimensions that emerge from the factor analysis. These dimensions are: “trust in the patient-focus of health care providers”, “trust that policies at the macro-level will be without consequences for the patient”, “trust in the expertise of health care providers”, “trust in quality of care”, “trust in information supply and communication by care providers” and “trust in the quality of cooperation”. Two dimensions in the qualitative phase do not appear. These are “trust in time spent on patients” and “trust in the availability of care”.

The explanation for the “time” dimension's failure to appear is that one of the items emerges as part of another dimension. The same is true of the “availability” dimension. Another reason for this latter's dimension failure to appear is that loose items cluster in more than one dimension. Also items from this category have a high response rate in the “no opinion” category. All items except one, which has become part of another dimension, are excluded. Items relating to the potential dimension referred to as “trust in the expertise of providers” also cluster in several groups. In spite of this, it is still possible to relate a substantial number of the items (6 out of 11) to the “trust in the expertise of providers” mentioned. All other items are excluded from the expertise dimension.

Another result of the factor analysis is that three items have become part of another dimension.

In Table 1, the eigenvalue, percentage of explained variance, reliability and items are given.

The table shows that all eigenvalues are higher than 1. The “patient-focus” dimension has the highest eigenvalue and explains a much greater percentage of variance than the other dimensions. The items relating to each of the dimensions form a reliable scale. Most “alpha” values are higher than 80. One exception is the “expertise of health care providers” scale.

The correlation between the dimensions is presented in Table 2.

The correlations among the dimensions vary between 0.20 and 0.69. The correlation between trust dimensions

Table 1

Eigenvalue, percentage of explained variance, reliability and items with factor-loadings of six factors

Dimensions of public trust and items	Eigenvalue	Percentage of explained variance	Reliability	Factor loading
<i>1. Patient focus of providers</i>	11.7	32.5	0.88	
I have absolute confidence that:				
Doctors will take their patients seriously				0.78
Doctors will pay sufficient attention to their patients				0.75
Doctors will listen to their patients				0.69
Doctors spend enough time on their patients				0.66
Doctors will always stick up for their patients				0.61
Doctors will understand their patients' problems				0.50
<i>2. Policies at the macro level will be without consequences for the patient</i>	2.7	7.6	0.87	
I have absolute confidence that:				
Cost-cutting will not be to the disadvantage of patients				0.85
Patients will be able to meet their own financial contribution requirement				0.78
Waiting lists will not be at the cost of medical help and care to patients				0.77
Patients will not be the victim of the rising costs of health care				0.75
Waiting times will never be too long				0.73
Government will ensure a qualitatively good system of health care				0.68
<i>3. Health care providers' expertise</i>	2.0	5.6	0.74	
I have absolute confidence that:				
Nowadays doctors can do a lot more than they used to be able to do				0.71
Doctors know so much about all sorts of diseases				0.69
New discoveries are always being made and put into practice in the health care system				0.68
Dutch doctors are very well trained				0.66
It is amazing the sort of operation surgeons carry out nowadays				0.60
Doctors are always looking for the right answer				0.44
<i>4. Quality of care</i>	1.6	4.5	0.85	
I have absolute confidence that:				0.76
The right dosage will be given				0.70
Doctors won't prescribe medicines too late				0.70
Patients receive the correct medication				0.58
Doctors won't prescribe medicines too quickly				0.56
Doctors will always treat the patients' confidential data with great care				0.55
Doctors won't do too few tests				0.55
Doctors won't do too many tests				0.53
Doctors will give the patients the best treatment				0.48
Doctors will make the right diagnosis				0.47
<i>5. Information supply and communication by care providers</i>	1.3	3.7	0.87	
I have absolute confidence that:				
Patients will get sufficient information about the effects of the treatment				0.84
Patients will get sufficient information about the treatment options				0.82
Patients will be given information that they can understand				0.76
Patients will get sufficient information about the cause of their problem				0.71
Doctors will discuss things thoroughly with their patients				0.55
Doctors will make use of the patients' own understanding and insights				0.43
<i>6. Quality of cooperation</i>	1.2	3.3	0.80	
I have absolute confidence that:				
Medical specialists always cooperate with one another				0.67
Doctors won't give conflicting information				0.64
The tendency towards a high degree of specialization does not cause problems				0.61

Table 2
Correlations between six public trust scales*

	<i>N</i>	Patient focus	Policies at the macro-level	Providers' expertise	Quality of care	Information supply and communication	Quality of cooperation
Patient focus	1041						
Policies at the macro-level	1041	0.40**					
Providers' expertise	1041	0.40**	0.20**				
Quality of care	1041	0.64**	0.39**	0.37**			
Information supply and communication	1041	0.69**	0.42**	0.38**	0.62**		
Quality of cooperation	1041	0.57**	0.41**	0.38**	0.53**	0.53**	

* $p < 0.01$, ** $p < 0.001$.

Table 3
Correlations between mark 'public trust', experiences with health care, and public trust scales*

	<i>N</i>	Patient focus	Policies at the macro-level	Providers' expertise	Quality of care	Information supply and communication	Quality of cooperation
Mark public trust	1035	0.39**	0.31**	0.37**	0.26**	0.33**	0.30**
Negative or positive experience via media	998	0.15**	0.17**	0.19**	0.08**	0.09**	0.14**
Negative or positive experience of parents	824	0.26**	0.13**	0.21**	0.22**	0.20**	0.17
Negative or positive experience of friends	926	0.38**	0.26**	0.35**	0.31**	0.34**	0.36**
Negative or positive personal experience	987	0.34**	0.21**	0.38**	0.20**	0.30**	0.24**

* $p < 0.01$, ** $p < 0.001$.

on the one hand and background variables, age and educational level, on the other, are statistically significant. Elderly people show a higher level of trust than young people. This relates to all of the dimensions. Furthermore, those with a lower level of education display a higher level of trust in the health care system, except as regards the "trust that policies at the macro-level will have no consequences for the patient" dimension, where no effect was found for educational level.

Validity

An indication of the validity of the scales can be obtained by relating them to relevant variables. The first variable is the mark that people give to express their trust in the health care system. The average mark is 6.7 (s.d = 0.97). The expectation is that a high correlation obtains between each of the scales and the mark given see Table 2). Correlations between the scales and people's experience are also presented in Table 3.

The table shows that there is a positive and significant correlation between each of the indicators and the scales. All correlations between the general mark of trust and

each of the scales are higher than 0.25. The strongest correlation (0.39) involves "patient-focus".

Further, the correlations between the scales on the one hand and different kinds of personal experience, on the other, are statistically significant. The range of values of the correlation between the separate scales and experience via the media is 0.08 to 0.19. The correlations between the scales and experience of their parents are in some cases higher when compared with relations between the "public trust" scales and experience via the media. Correlations between the scales and the experience of their friends are high and often higher than 30. Personal experience also correlate to a high degree with the "public trust" scales. Response to the "personal experience" item is quite high ($N = 987$). Apparently, a great number of people have had some experience of the health care system.

Conclusions and discussion

The principal research objective in this study is to monitor public trust in the Dutch health care system. The concept was poorly developed and operationalized in earlier research and consequently, the initial objective

here is to develop a valid and reliable instrument to measure the different dimensions of public trust. This article describes the instrument that has been developed. In the first of two phases of research 100 people were interviewed. In the second phase, a questionnaire was sent to the 1,500 members of the Netherlands' Health Care Consumer Panel. There are differences between this panel and the Dutch population as a whole in respect of age, for example. However, these differences are especially relevant for further research and less relevant to the subject of this article, i.e.: the development of an instrument.

On the basis of the results, it may be concluded that public trust is indeed a multi-dimensional concept. We have found six dimensions of trust in both the qualitative phase and in the quantitative phase of the study. These are trust in "the patient-focus of health care providers", "that policies at the macro-level will have no consequences for the patient", "expertise of health care providers", "quality of care", "information supply and communication by care providers" and "the quality of cooperation".

Whether the instrument is useful depends on its reliability and validity. The analyses show that each of the scales is reliable. They all meet the criterion set for research goals of 0.70 (Nunnally & Bernstein, 1994). Test-retest reliability has not been established. The validity of the instrument is difficult to determine. Nevertheless, there are indications that the instrument may be considered valid. One indication is that the instrument is based on empirical observations. Indeed, six of the eight possible dimensions based on open interviews held in the first phase, also appear as outcomes of the factor analysis in the second phase. These dimensions do not seem to depend on the methodological approach employed. On the basis of Cook and Campbell's categorization of different kinds of validity, this indication can be categorized as construct validity (Cook & Campbell, 1979).

Another indication is the relationship between each of the scales and the mark informants gave to express their degree of trust in the health care system. The correlations are to be qualified as relatively high. At the same time, it can be stated that the correlation is not too high nor too low. An interpretation with a much higher correlation would have resulted in a preference for the more general question "do you have trust in the health care system", which can be regarded as a good and more parsimonious operationalization of the concept. On the basis of a much lower correlation, the conclusion would have been that the dimensions were not a valid operationalization of the concept of trust. Now we find that both the dimensions and the general question are related, but are different issues. The instrument that has been developed facilitates a more precise measurement of trust than the general question. The last indication is the relation between the

scales and different types of experiences with health care. In terms of Cook and Campbell (1979), this indication refers to internal validity.

We also found that both those with a great deal and those with little personal experience of the health care system were able to make an assessment. The ability to judge in combination with correlations between experience and the scales that are on the high side, indicates that personal experience may be an important factor in relation to public trust. One possible mechanism that may be used to determine the degree of public trust is the generalization mentioned by Mechanic (1998a, b). He states that a person generalises his (interpersonal) trust in his doctors and nurses to the level of their organizations and that this affects the personal willingness to use this organization or institution. Personal experience is not the only relevant variable. Another variable is the experience of friends, which influences a person's trust via the process of collectivization. This means that in personal networks information about health care is exchanged, which as a consequence, determines the level of trust.

It is interesting to observe that only two of the six scales, "expertise" and "quality of care", refer to medical practice. These dimensions correspond with the theoretical dimension of technical competence that Gray and Mechanic distinguished. The other dimensions relate to health care as a system and the worries of potential consumers as to whether they will be cared for and treated when this is required. Their worries are related to different levels of the health care system. At the micro-level, people are worried about information supply, and, in more general terms, about the behaviour of the providers. They wonder whether the providers will pay enough attention to them, take enough time, and listen and take their problem seriously. At the meso-level, the worries are about cooperation in the health care system among the providers. Can patients be sure that providers will work together and cooperate? At the macro-level, people fear developments with possible consequences for the accessibility and quality of health care. These last two dimensions emphasize the fact that public trust is not solely related to the relation between patients and health care providers. Accordingly, public trust is a more general concept than, for example, the interpersonal trust indicating trust in a specific person and context.

Mechanic and Schlesinger (1996) hypothesized that changes in health care institutions may affect public trust in health care. Our findings reveal that public trust does indeed comprise elements relating to the institutional character of health care, suggesting that changes in the institutional character may indeed influence public trust. This also indicates that this instrument is relevant in monitoring the impact of political changes in the institutions on patients, and changes on the macro- and meso-level.

Although there are indications concerning the validity and reliability of the instrument, further research into the concept of trust is necessary. A deeper insight into the actual meaning of trust can be gained by investigating the relation between trust and people's behaviour. The hypothesis is that people with a higher level of trust in the health care system do not act in the same way as people with a low level of trust. Expectations are that people with a lower level of trust will more often request a second opinion and consult "alternative" practitioners. Confirmation of these expectations on the basis of research would be another indication that the instrument developed is a valid operationalization of the concept of public trust. Furthermore, in research attention can be paid to changes due to political decisions. Views about such changes, as the reimbursement of prescription charges, can be measured and related to public trust and specific behaviour. This will show us whether the instrument makes it possible to determine whether there is conflict between the public interest and the interest of politicians, policy-makers and health care providers.

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